

DRAWING LIST

Control Enclosure Power Supply Schematic Diagram

P101_002

P101_002.sch

VFD Enclosure Power Supply Schematic Diagram

P101_003

P101_003.sch

DC Power Supply Schematic Diagram

P101_004

P101_004.sch

Stepper Motor Driver Schematic Diagram

P101_005

P101_005.sch

Variable Frequency Drive Schematic Diagram

P101_006

P101_006.sch

Mechanical Services Schematic Diagram

P101_007

P101_007.sch

Ethernet Smoothstepper Schematic Diagram

P101_008

P101_008.sch

Emergency Stop Schematic Diagram

P101_009

P101_009.sch

Communications Schematic Diagram

P101_010

P101_010.sch

Cable Termination Diagram Drawing List

P101_030

P101_030.sch

Terminal Block Diagrams Drawing List

P101_040

P101_040.sch

Cable Layout Diagrams Drawing List

P101_050

P101_050.sch



Size: A3
Not to scale

File: P101_001.sch

PROJ: Swarfy's 8x4 Metric Evolution
TITLE: Master Drawing List

DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

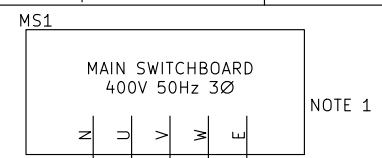
DRAWING NUMBER

P101_001

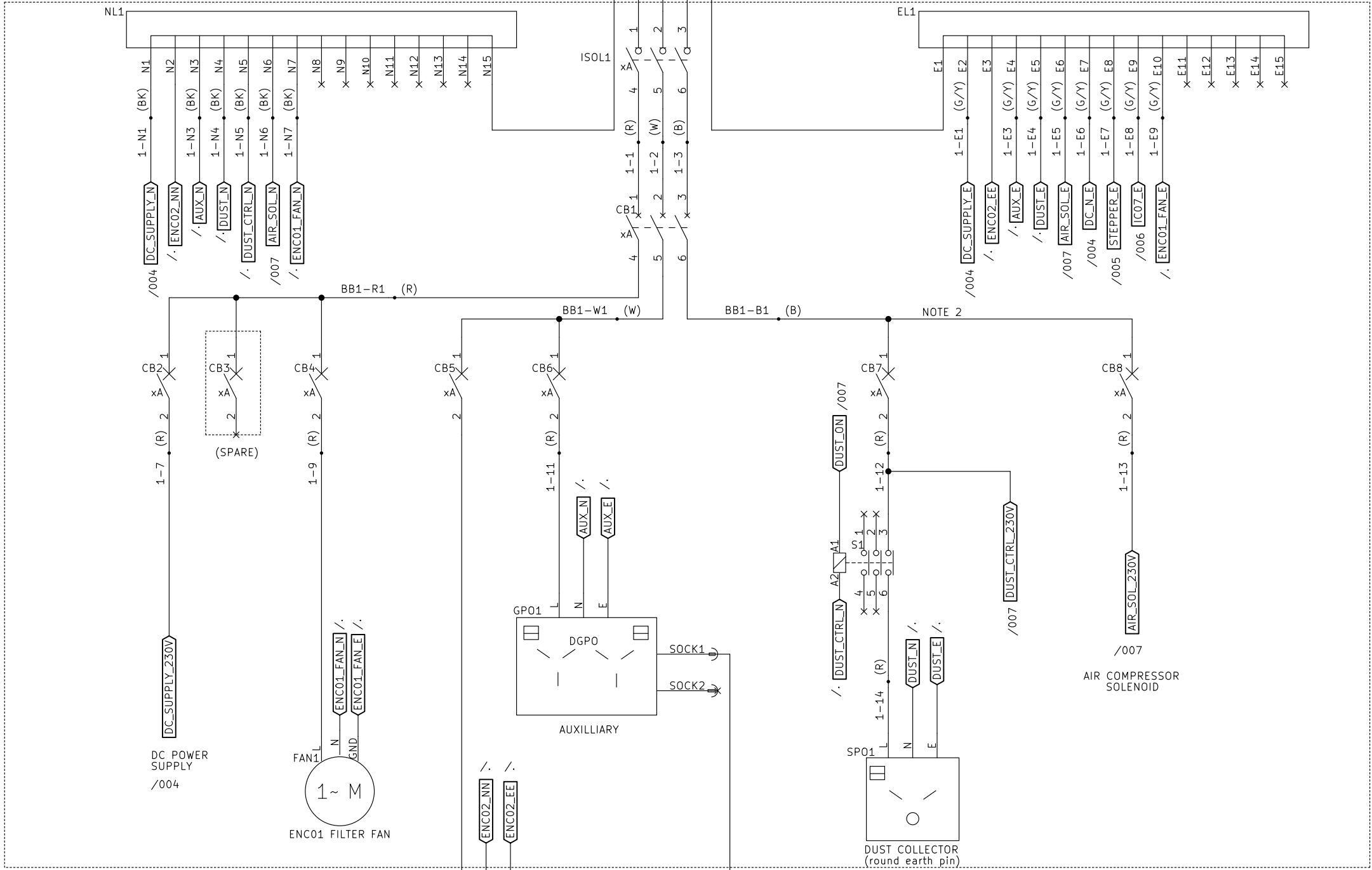
REV

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ENC01



FIELD



NOTES

- MEN connection at main switchboard
- Use 3 pole 63A (min) busbar comb not wire

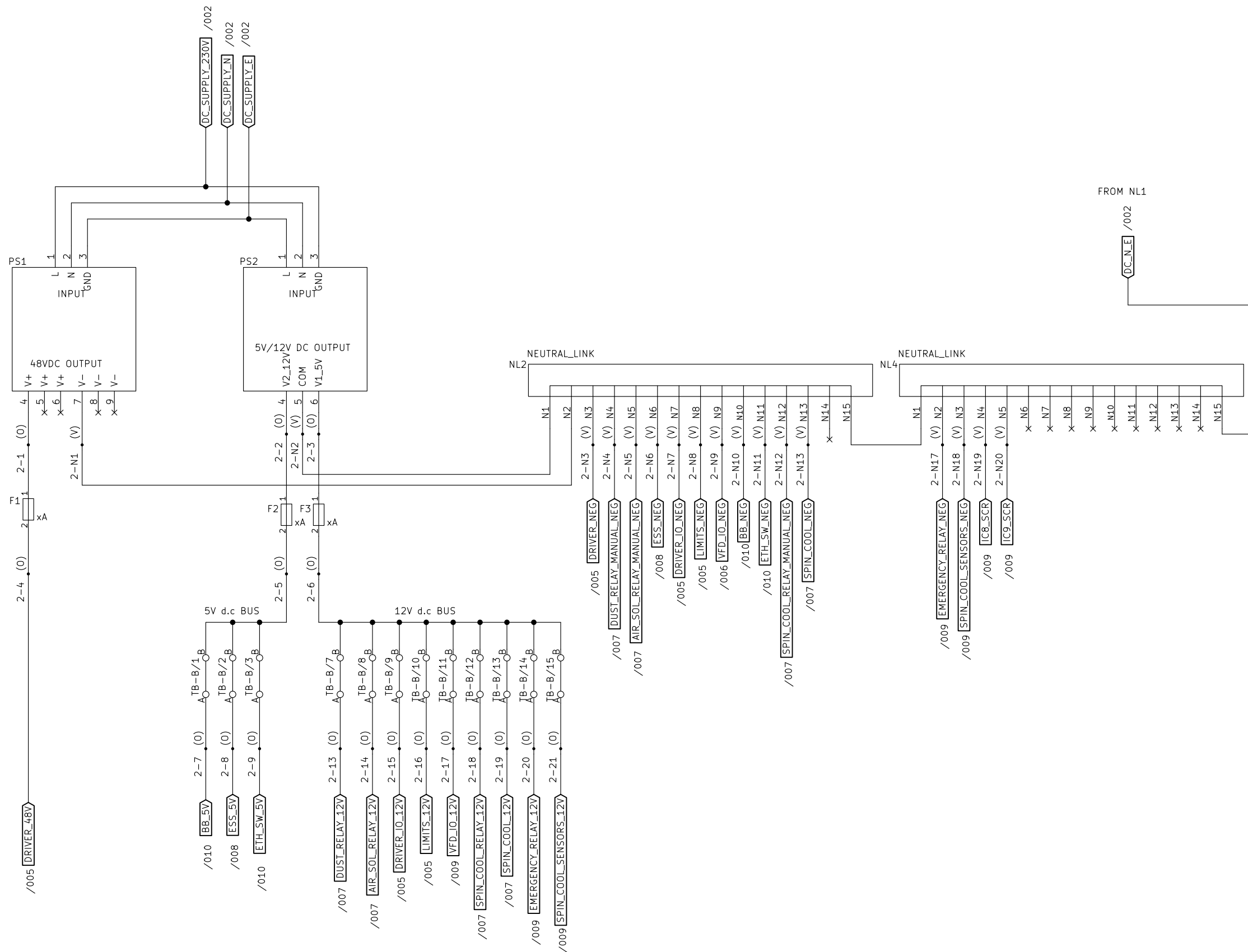


Size: A3
Not to scale

PROJ: Swarfy's 8x4 Metric Evolution	DRAWING NUMBER	REV
TITLE: Control Enclosure Power Supply Schematic Diagram	P101_002	0
DATE: 2016-12-23		
CMNT: Issued For Construction		
DES: JSR		
RVW: JSR		
APP: JSR		

File: P101_002.sch

ENC01



Size: A3
Not to scale

PROJ: Swarfy's 8x4 Metric Evolution
TITLE: DC Power Supply
Schematic Diagram
DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER

P101_004

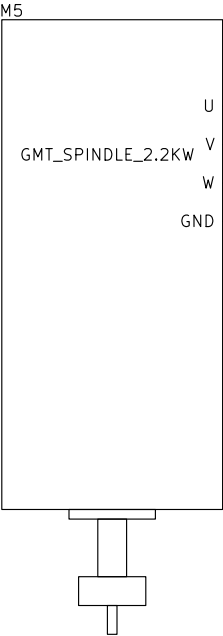
REV

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FIELD

ENC02

ENC01



/003 VFD_SUPPLY_230V
/003 VFD_SUPPLY_N
/003 VFD_SUPPLY_E

RB
PD/+1
P/+
N/-

L1
N
GND

U/T1
V/T2
W/T3

SPINDLE_E
/003

POWER INPUT
OUTPUT TO MOTOR

HITACHI_WJ200_022Sf

P24
PLC
L
1
2
3/GS1
4/GS2
5/PTC
6
7/EB
SN
SP
EO
EA
H
O
OI
L
AM
CM2
12
11
AL0
AL1
AL2

SINKING (IEC NEG)

3-15 (P) TB-C/1A
3-17 (P) TB-C/2A
3-19 (P) TB-C/3A
3-20 (P) TB-C/4A
3-21 (P) TB-C/5A
3-22 (P) TB-C/6A
3-23 (P) TB-C/7A
3-25 (P) TB-C/8A
3-27 (P) TB-C/9A
TB-C/10A
TB-C/11A
TB-C/12A
TB-C/13A
TB-A/19B
TB-A/20B
TB-A/21B
TB-A/22B
TB-A/23B
TB-A/24B
TB-A/25B
TB-A/26B
TB-A/27B
TB-A/28B
TB-A/29B
TB-A/30B
TB-A/31B
(1BK) IC-7/1
(1W) IC-7/2
(2BK) IC-7/3
(2W) IC-7/4
(3BK) IC-7/5
(3W) IC-7/6
(4BK) IC-7/7
(4W) IC-7/8
(5BK) IC-7/9
(5W) IC-7/10
(6BK) IC-7/11
(6W) IC-7/12
(BARE) IC-7/D1

3-16 (P)
3-18 (P)
3-19 (P)
3-20 (P)
3-21 (P)
3-22 (P)
3-23 (P)
3-24 (P)
3-26 (P)
3-28 (P)
K7C 22
/009 24
VFD_10V_OUT /005
VFD_FREQ_CONTROL /005
DRIVER_VFD_GND /005
VFD_IO_NEG /004
VFD_SPINDLE_RUNNING /009
(ACTIVE LOW)
VFD_ALARM_C /009
VFD_ALARM_NC /009
IC07_E /002



Size: A3
Not to scale

PROJ: Swarfy's 8x4 Metric Evolution
TITLE: Variable Frequency Drive
Schematic Diagram
DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER

P101_006

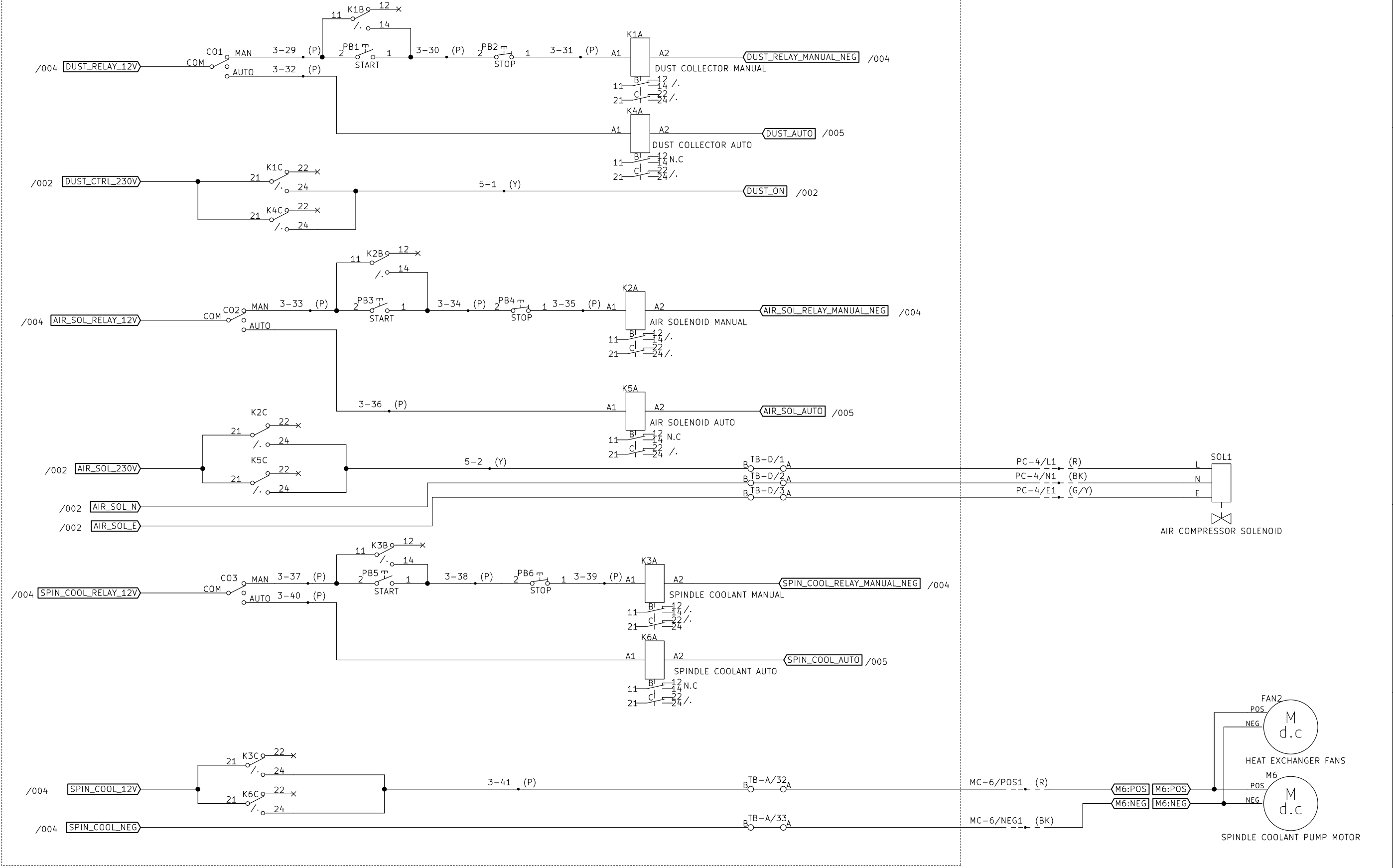
REV

0

File: P101_006.sch

ENC01

FIELD



Size: A3
Not to scale

PROJ: Swarfy's 8x4 Metric Evolution
TITLE: Mechanical Services
Schematic Diagram
DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER

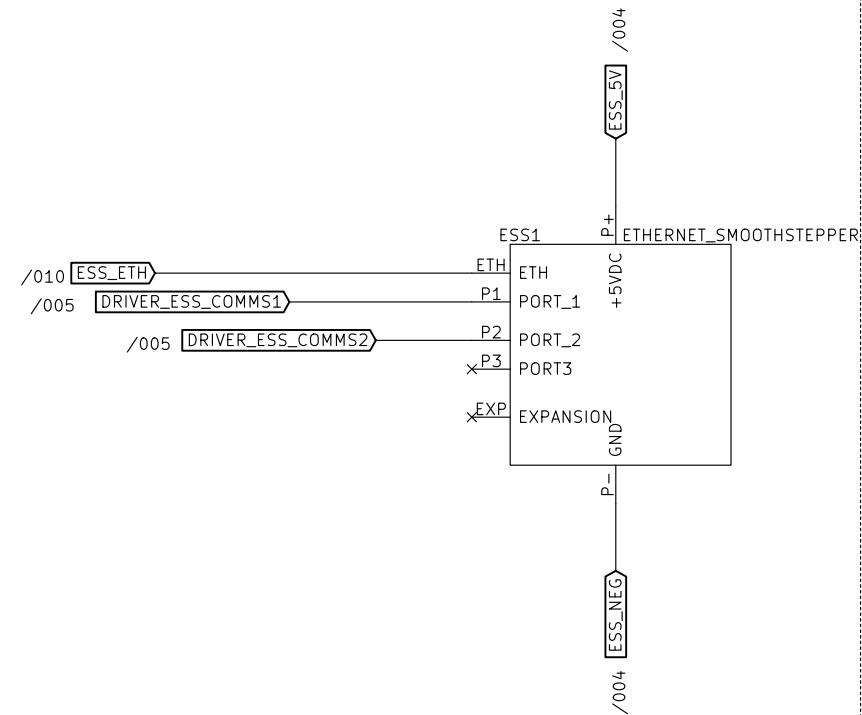
P101_007

REV

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File: P101_007.sch

ENC01



FIELD



Size: A3
Not to scale

PROJ: Swarfy's 8x4 Metric Evolution
TITLE: Ethernet Smoothstepper Schematic Diagram
DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

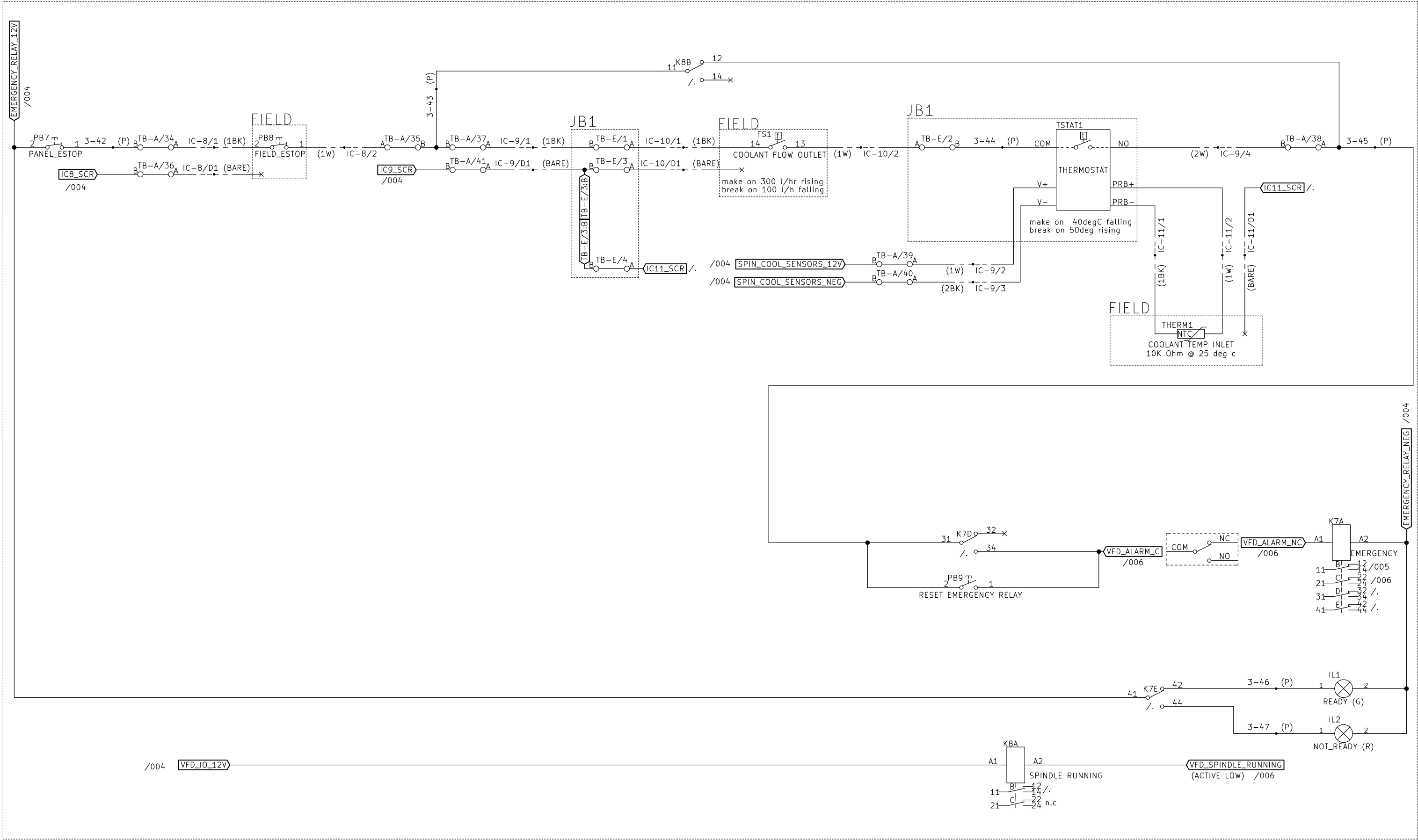
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P101_008

REV

0

File: P101_008.sch



Size: A3
Not to scale

PROJ: Swarfy's 8x4 Metric Evolution
TITLE: Emergency Stop
Schematic Diagram
DATE: 2016-12-23
CMNT: Issued For Construction

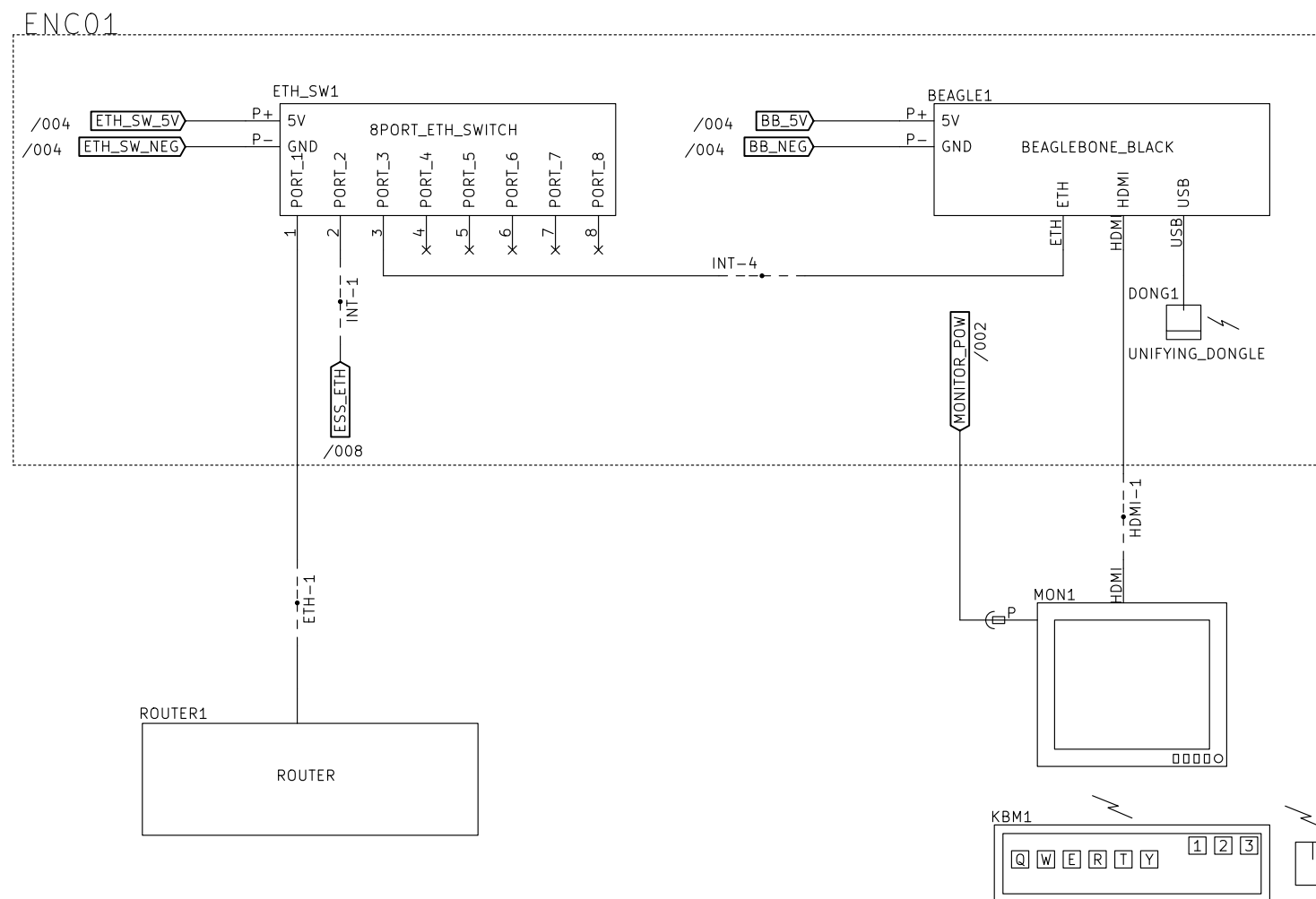
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RVW: JSR
APP: JSR

DRAWING NUMBER

P101_009

REV

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FIELD



Size: A3
Not to scale

PROJ: Swarfy's 8x4 Metric Evolution
TITLE: Communications Schematic Diagram
DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER

P101_010

REV

0

DRAWING LIST

Terminal Block A Diagram

P101_041

P101_041.sch

Terminal Block B Diagram

P101_042

P101_042.sch

Terminal Block C Diagram

P101_043

P101_043.sch

Terminal Block D Diagram

P101_044

P101_044.sch

Terminal Block E Diagram

P101_045

P101_045.sch



Size: A3
Not to scale

PROJ: Swarfy's 8x4 Metric Evolution
TITLE: Terminal Block Diagrams
Drawing List
DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER

P101_040

REV

0

File: P101_040.sch

TERMINAL BLOCK A

/005	IC-1/1	(BN)	A	A1	B	(O)	2-16	/004
/005	IC-1/2	(BK)	A	A2	B	(P)	3-1	/005
/005	IC-1/3	(B)	A	A3	B	(V)	2-N8	/004
/005	IC-2/1	(BN)	A	A4	B	(O)	2-16	/004
/005	IC-2/2	(BK)	A	A5	B	(P)	3-2	/005
/005	IC-2/3	(B)	A	A6	B	(V)	2-N8	/004
/005	IC-3/1	(BN)	A	A7	B	(O)	2-16	/004
/005	IC-3/2	(BK)	A	A8	B	(P)	3-3	/005
/005	IC-3/3	(B)	A	A9	B	(V)	2-N8	/004
/005	IC-4/1	(BN)	A	A10	B	(O)	2-16	/004
/005	IC-4/2	(BK)	A	A11	B	(P)	3-4	/005
/005	IC-4/3	(B)	A	A12	B	(V)	2-N8	/004
/005	IC-5/1	(BN)	A	A13	B	(O)	2-16	/004
/005	IC-5/2	(BK)	A	A14	B	(P)	3-5	/005
/005	IC-5/3	(B)	A	A15	B	(V)	2-N8	/004
/005	IC-6/1	(1BK)	A	A16	B	(V)	2-N8	/004
/005	IC-6/2	(1W)	A	A17	B	(P)	3-10	/005
/005	IC-6/D1	(BARE)	A	A18	B		N.C	N.C
/006	IC-7/1	(1BK)	A	A19	B	(P)	3-16	/006
/006	IC-7/2	(1W)	A	A20	B	(P)	3-18	/006
/006	IC-7/3	(2BK)	A	A21	B	(P)	3-6	/005
/006	IC-7/4	(2W)	A	A22	B	(P)	3-9	/005
/006	IC-7/5	(3BK)	A	A23	B	(P)	3-11	/005
/006	IC-7/6	(3W)	A	A24	B	(V)	2-N9	/004
/006	IC-7/7	(4BK)	A	A25	B	(P)	3-24	/006
/006	IC-7/8	(4W)	A	A26	B	(P)	3-26	/006
/006	IC-7/9	(5BK)	A	A27	B	(P)	3-28	/006
/006	IC-7/10	(5W)	A	A28	B		N.C	N.C
/006	IC-7/11	(6BK)	A	A29	B		N.C	N.C
/006	IC-7/12	(6W)	A	A30	B		N.C	N.C
/006	IC-7/D1	(BARE)	A	A31	B	(G/Y)	1-E8	/002
/007	MC-6/POS1	(R)	A	A32	B	(P)	3-41	/007
/007	MC-6/NEG1	(BK)	A	A33	B	(V)	2-N13	/004
/009	IC-8/1	(1BK)	A	A34	B	(P)	3-42	/009

TERMINAL BLOCK A(contd)

/009	IC-8/2	(1W)	A	A35	B	(P)	3-43	/009
/009	IC-8/D1	(BARE)	A	A36	B	(V)	2-N19	/004
/009	IC-9/1	(1BK)	A	A37	B	(P)	3-43	/009
/009	3-45	(P)	A	A38	B	(2W)	IC-9/4	/009
/009	IC-9/2	(1W)	A	A39	B	(O)	2-21	/004
/009	IC-9/3	(2BK)	A	A40	B	(V)	2-N18	/004
/009	IC-9/D1	(BARE)	A	A41	B	(V)	2-N20	/004



Size: A3
Not to scale

PROJ: Swarfys 8x4 Metric Evolution
TITLE: Terminal Block Diagram

DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER

P101_041

REV

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TERMINAL BLOCK B

/004	2-7	(0)	A	B1	B	(0)	2-5	/004
/004	2-8	(0)	A	B2	B	(0)	2-5	/004
/004	2-9	(0)	A	B3	B	(0)	2-5	/004
/004	2-13	(0)	A	B7	B	(0)	2-6	/004
/004	2-14	(0)	A	B8	B	(0)	2-6	/004
/004	2-15	(0)	A	B9	B	(0)	2-6	/004
/004	2-16	(0)	A	B10	B	(0)	2-6	/004
/004	2-17	(0)	A	B11	B	(0)	2-6	/004
/004	2-18	(0)	A	B12	B	(0)	2-6	/004
/004	2-19	(0)	A	B13	B	(0)	2-6	/004
/004	2-20	(0)	A	B14	B	(0)	2-6	/004
/004	2-21	(0)	A	B15	B	(0)	2-6	/004



PROJ: Swarfys 8x4 Metric Evolution
TITLE: Terminal Block Diagram

DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER

REV

P101_042

0

Size: A3
Not to scale

TERMINAL BLOCK C

/006	IC-7/1	(1BK)	A	C1	B	(P)	3-15	/006
/006	IC-7/2	(1W)	A	C2	B	(P)	3-17	/006
/006	IC-7/3	(2BK)	A	C3	B	(P)	3-19	/006
/006	IC-7/4	(2W)	A	C4	B	(P)	3-20	/006
/006	IC-7/5	(3BK)	A	C5	B	(P)	3-21	/006
/006	IC-7/6	(3W)	A	C6	B	(P)	3-22	/006
/006	IC-7/7	(4BK)	A	C7	B	(P)	3-23	/006
/006	IC-7/8	(4W)	A	C8	B	(P)	3-25	/006
/006	IC-7/9	(5BK)	A	C9	B	(P)	3-27	/006
/006	IC-7/10	(5W)	A	C10	B		N.C	N.C
/006	IC-7/11	(6BK)	A	C11	B		N.C	N.C
/006	IC-7/12	(6W)	A	C12	B		N.C	N.C
/006	IC-7/D1	(BARE)	A	C13	B		N.C	N.C



PROJ: Swarfys 8x4 Metric Evolution
TITLE: Terminal Block Diagram

DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBERREV

P101_0430

Size: A3
Not to scale

TERMINAL BLOCK D

/007	PC-4/L1	(R)	A	D1	B	(Y)	5-2	/007
/007	PC-4/N1	(BK)	A	D2	B	(BK)	1-N6	/002
/007	PC-4/E1	(G/Y)	A	D3	B	(G/Y)	1-E5	/002



PROJ: Swarfys 8x4 Metric Evolution
TITLE: Terminal Block Diagram

DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER

P101_044

REV

0

TERMINAL BLOCK E

/009	IC-10/1	(1BK)	A	E1	B	(1BK)	IC-9/1	/009
/009	IC-10/2	(1W)	A	E2	B	(P)	3-44	/009
/009	IC-10/D1	(BARE)	A	E3	B	(BARE)	IC-9/D1	/009
/009	IC-11/D1	(BARE)	A	E4	B	(BARE)	IC-9/D1	/009



PROJ: Swarfys 8x4 Metric Evolution
TITLE: Terminal Block Diagram

DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER REV

P101_045 0

DRAWING LIST

Cable Termination Diagram 1

P101_031

P101_031.sch

Cable Termination Diagram 2

P101_032

P101_032.sch

Cable Termination Diagram 3

P101_033

P101_033.sch

Cable Termination Diagram 4

P101_034

P101_034.sch



Size: A3
Not to scale

PROJ: Swarfy's 8x4 Metric Evolution
TITLE: Cable Termination Diagrams
Drawing List
DATE: 2016-12-23
CMNT: Issued For Construction

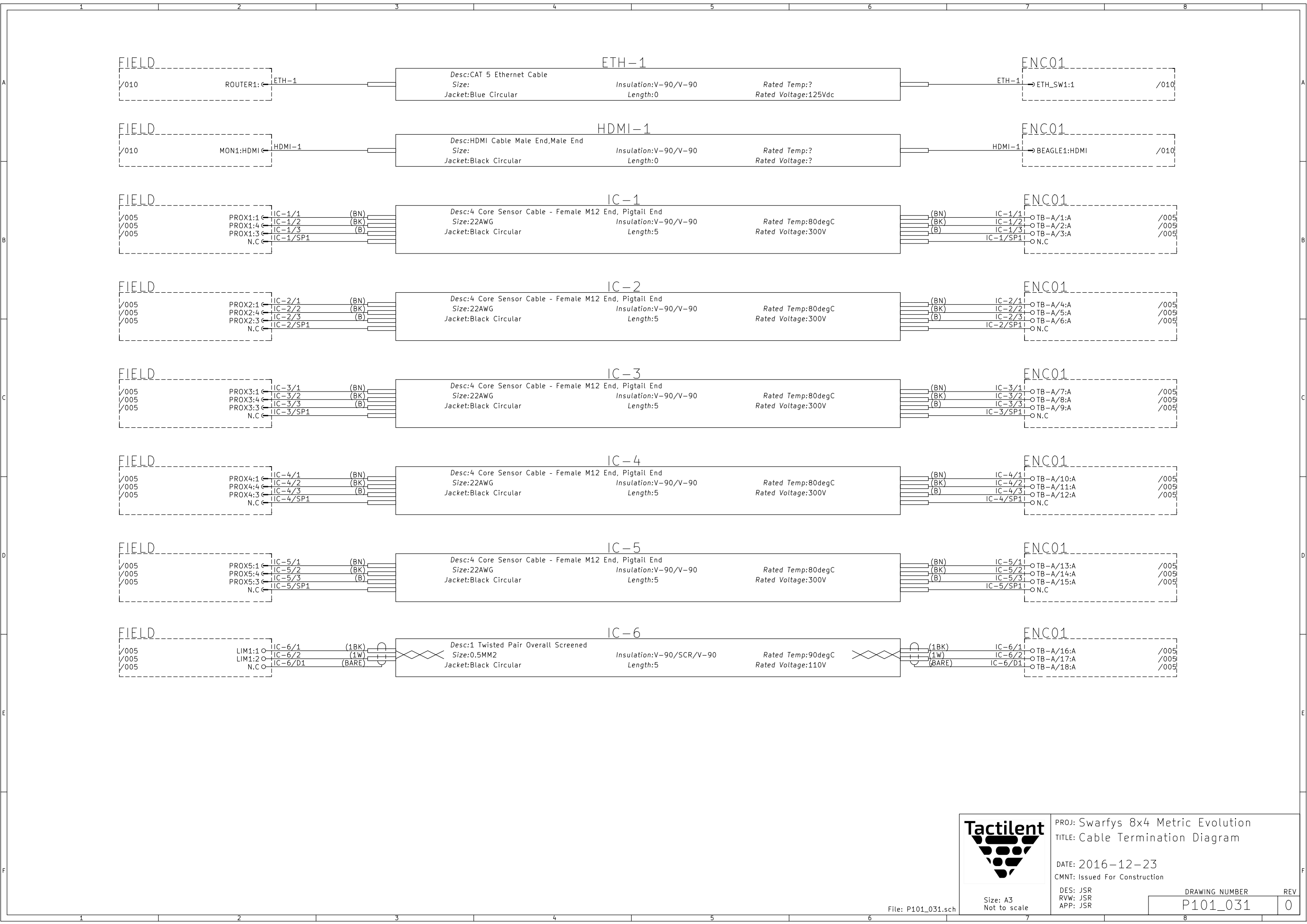
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DRAWING NUMBER

P101_030

REV

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Size: A3
Not to scale

PROJ: Swarfys 8x4 Metric Evolution
TITLE: Cable Termination Diagram

DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RWV: JSR
APP: JSR

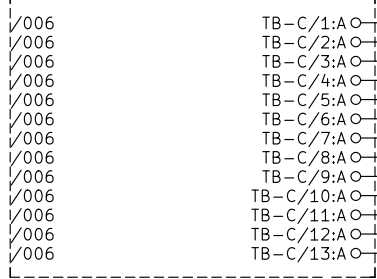
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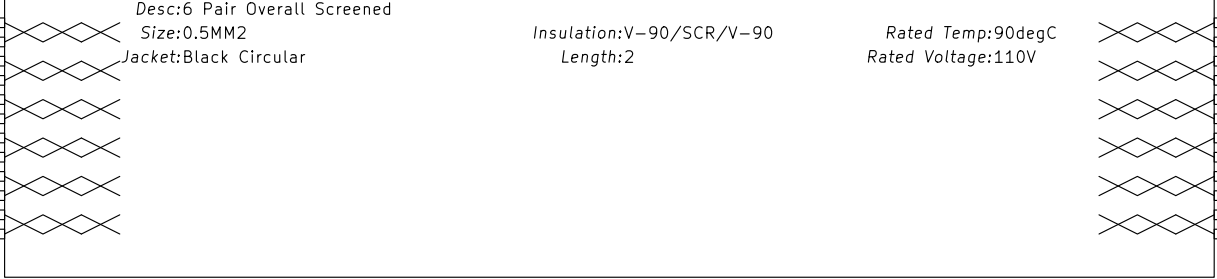
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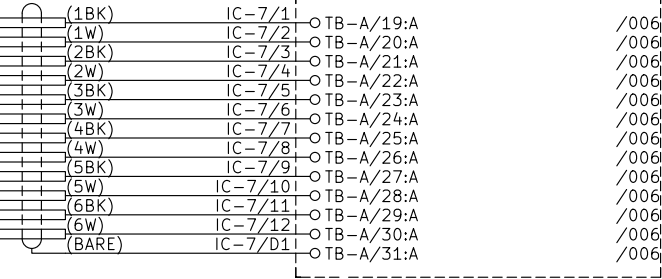
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IC-7



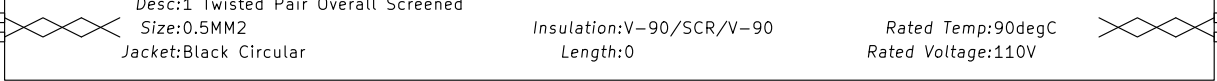
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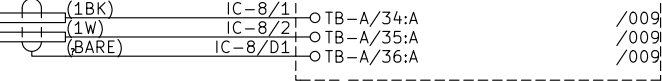
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IC-8



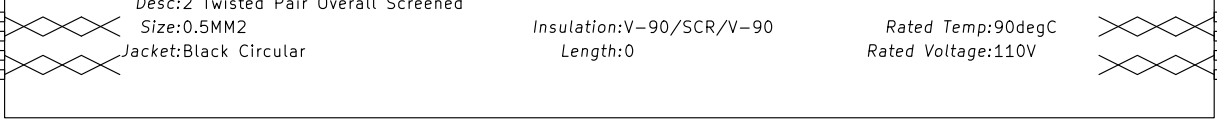
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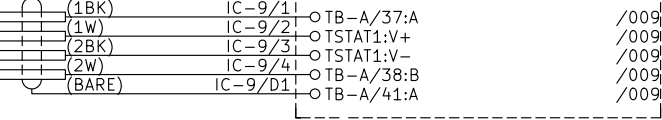
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IC-9



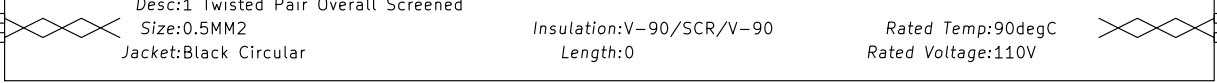
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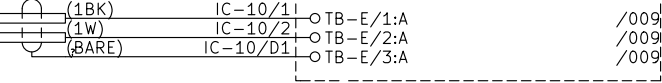
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IC-10



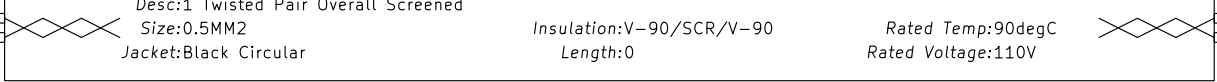
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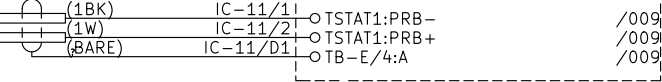
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IC-11



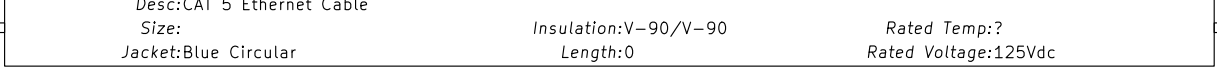
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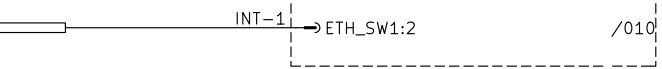
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INT-1



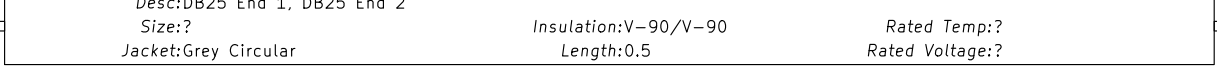
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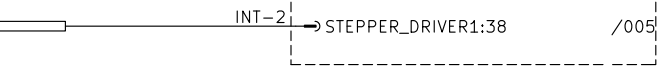
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INT-2



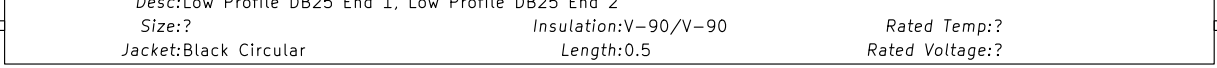
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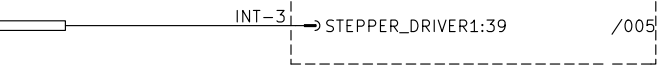
ENC01



INT-3



ENC01



Size: A3
Not to scale

PROJ: Swarfys 8x4 Metric Evolution
TITLE: Cable Termination Diagram

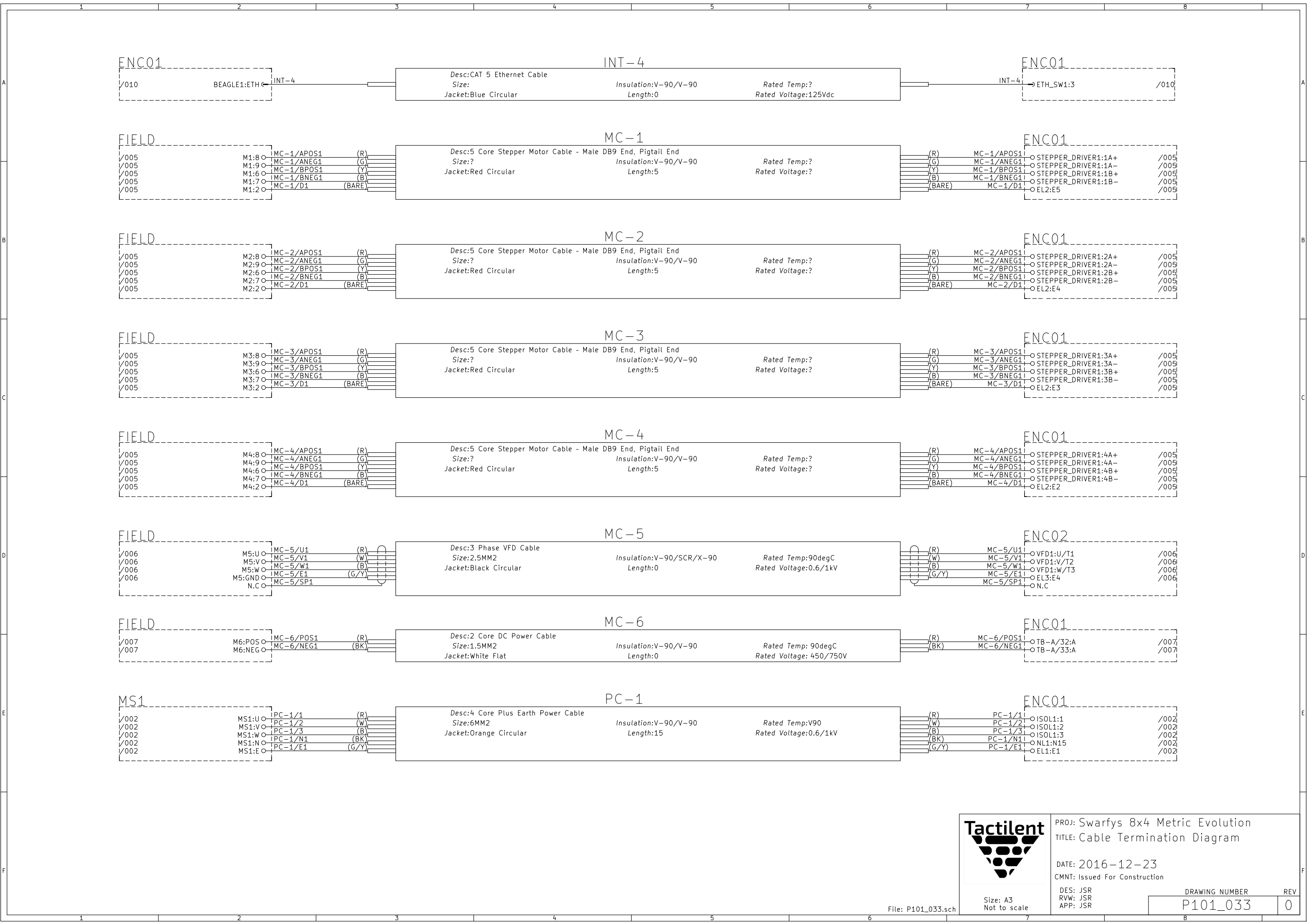
DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER REV

P101_032 0

File: P101_032.sch



Size: A3
Not to scale

PROJ: Swarfys 8x4 Metric Evolution
TITLE: Cable Termination Diagram

DATE: 2016-12-23
CMNT: Issued For Construction

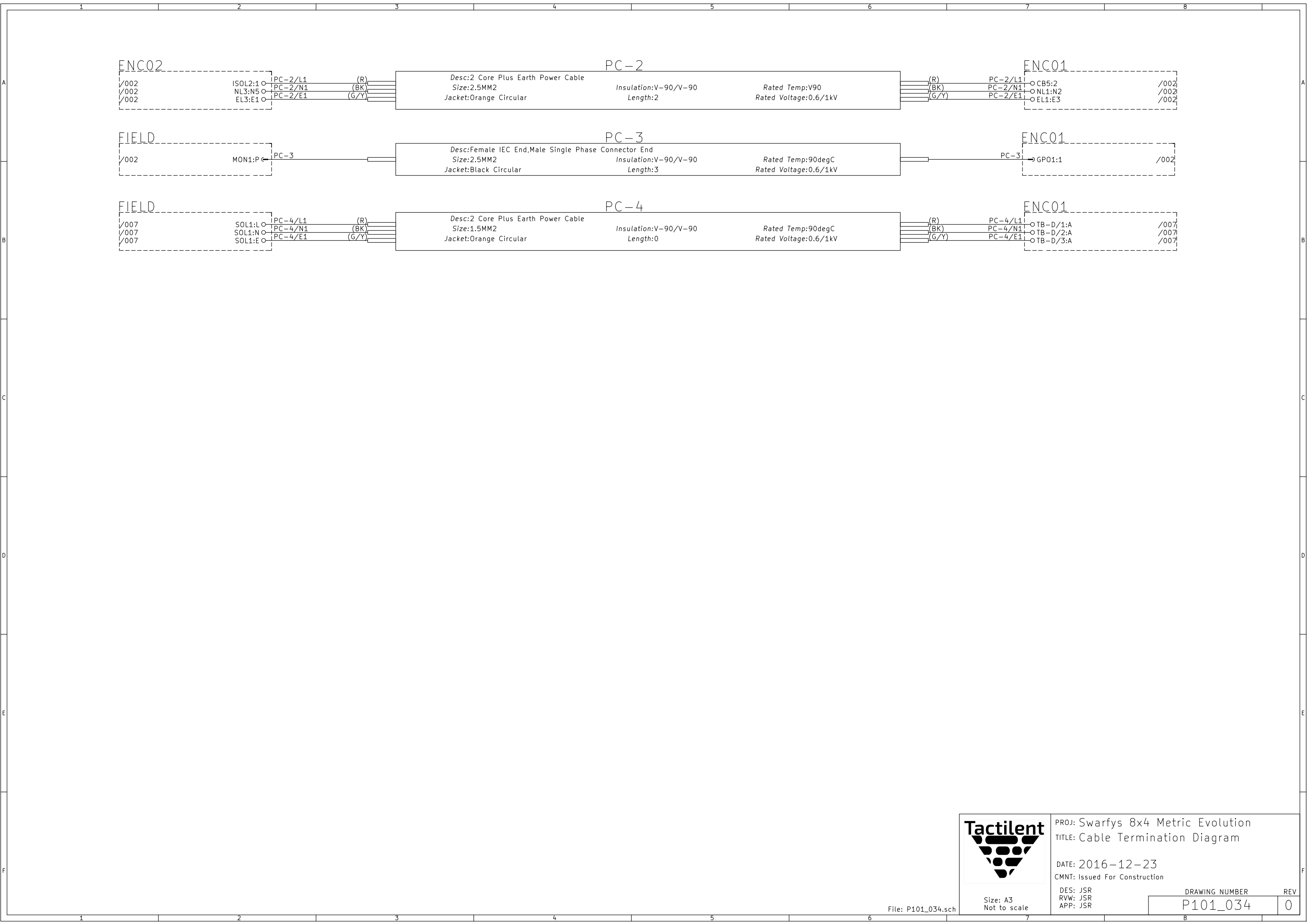
DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER

P101_033

REV

0



FIELD

/007

/007

/007

SOL1:L
SOL1:N
SOL1:E

PC-4/L1
PC-4/N1
PC-4/E1

(R)
(BK)
(G/Y)

PC-4

Desc:2 Core Plus Earth Power Cable
Size:1.5MM2
Jacket:Orange Circular

Insulation:V-90/V-90
Length:0

Rated Temp:90degC
Rated Voltage:0.6/1kV

(R)
(BK)
(G/Y)

PC-4/L1
PC-4/N1
PC-4/E1

ENC01

/007

/007

/007

TB-D/1:A
TB-D/2:A
TB-D/3:A

12345678

A


B

C

D

E

F



Size: A3
Not to scale

PROJ: Swarfys 8x4 Metric Evolution
TITLE: Cable Termination Diagram

DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER
P101_034

REV
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File: P101_034.sch

DRAWING LIST

Cable Location Diagram 1

P101_051

P101_051.sch

Cable Location Diagram 2

P101_052

P101_052.sch

Cable Location Diagram 3

P101_053

P101_053.sch

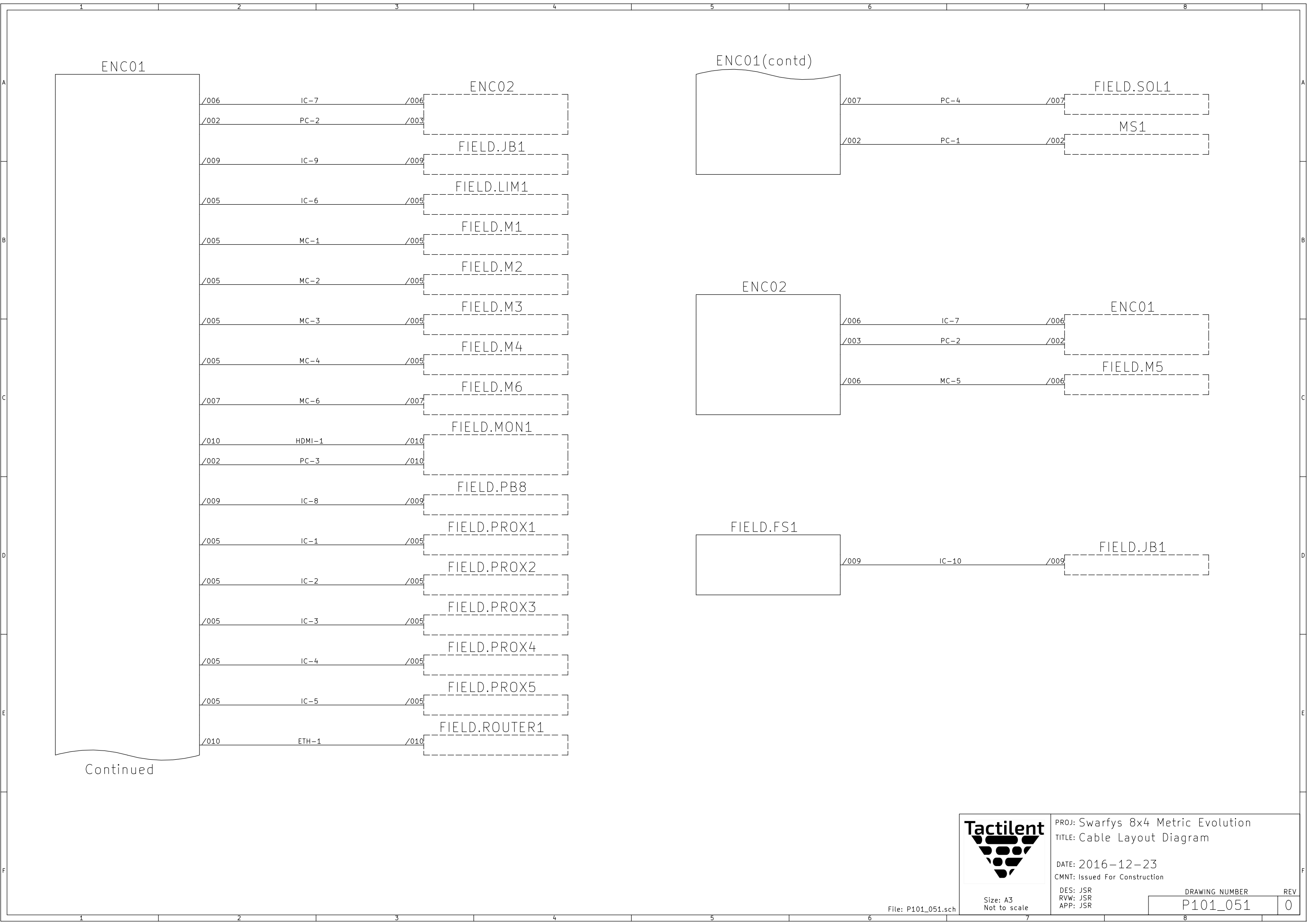
Cable Location Diagram 4

P101_054

P101_054.sch



PROJ: Swarfy's 8x4 Metric Evolution		
TITLE: Cable Location Diagrams Drawing List		
DATE: 2016-12-23		
CMNT: Issued For Construction		
DES: JSR	DRAWING NUMBER P101_050	REV
RVW: JSR		0
APP: JSR		



Tactilent

Size: A3

Not to scale

PROJ: Swarfys 8x4 Metric Evolution

TITLE: Cable Layout Diagram

DATE: 2016-12-23

CMNT: Issued For Construction

DES: JSR

RVW: JSR

APP: JSR

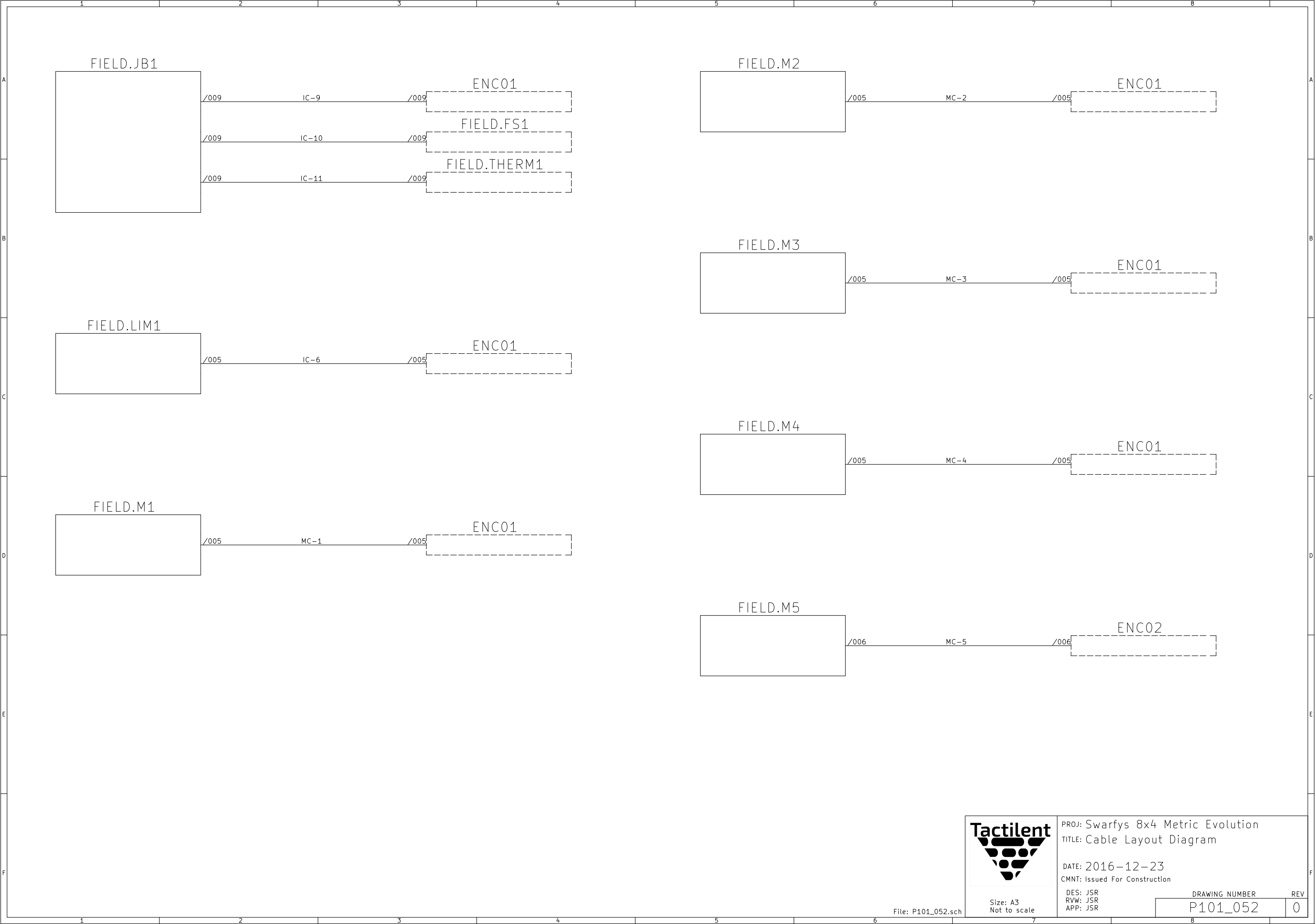
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P101_051

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File: P101_051.sch



Size: A3
Not to scale

PROJ: Swarfys 8x4 Metric Evolution
TITLE: Cable Layout Diagram

DATE: 2016-12-23
CMNT: Issued For Construction

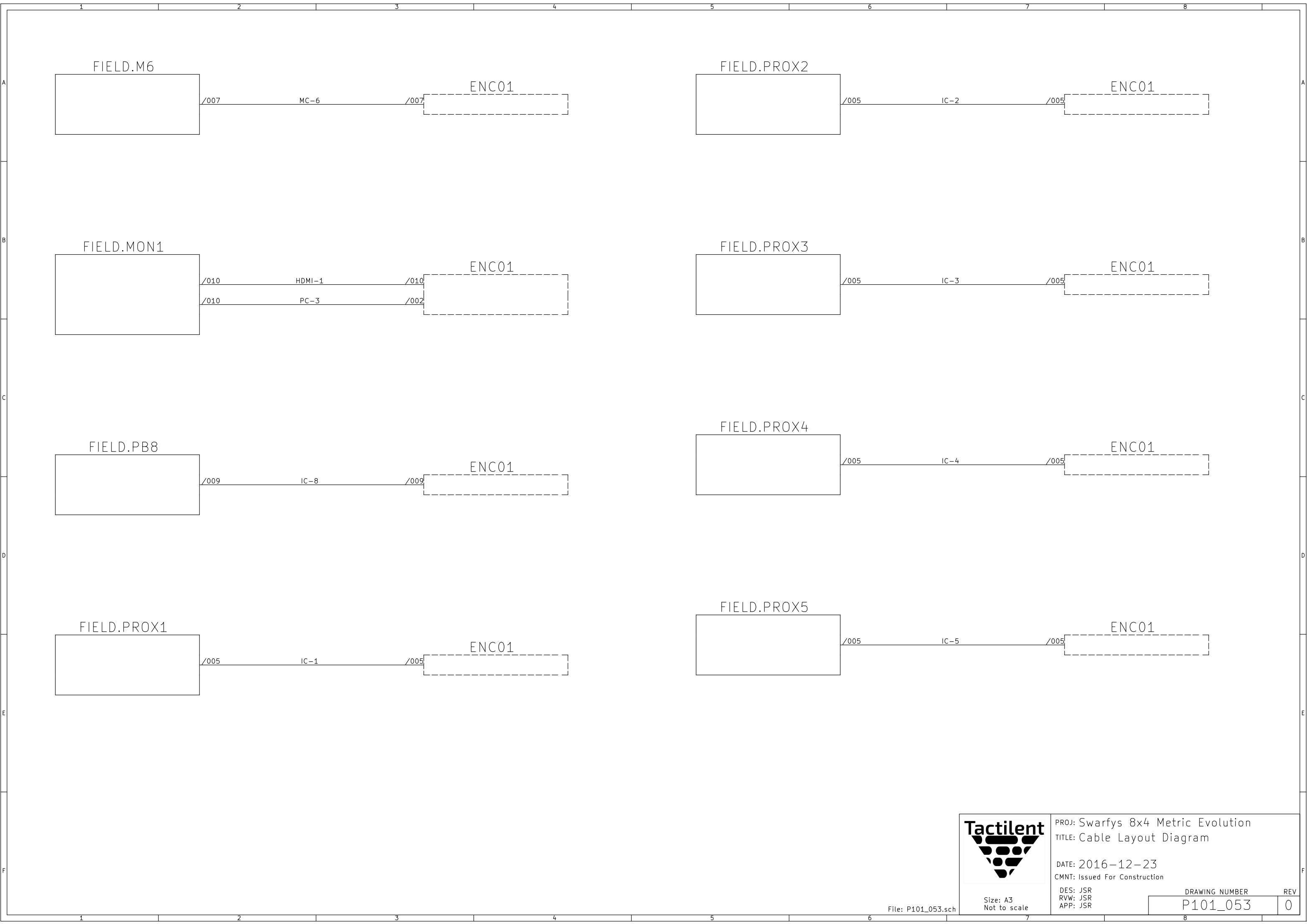
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DRAWING NUMBER

P101_052

REV

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Size: A3
Not to scale

PROJ: Swarfys 8x4 Metric Evolution
TITLE: Cable Layout Diagram

DATE: 2016-12-23
CMNT: Issued For Construction

DES: JSR
RVW: JSR
APP: JSR

DRAWING NUMBER

P101_053

REV

0

